Collection, harmonisation and sharing of environmental data to support decision making in the framework of Barcelona

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Mediterranean Action Plan
Barcelona Convention

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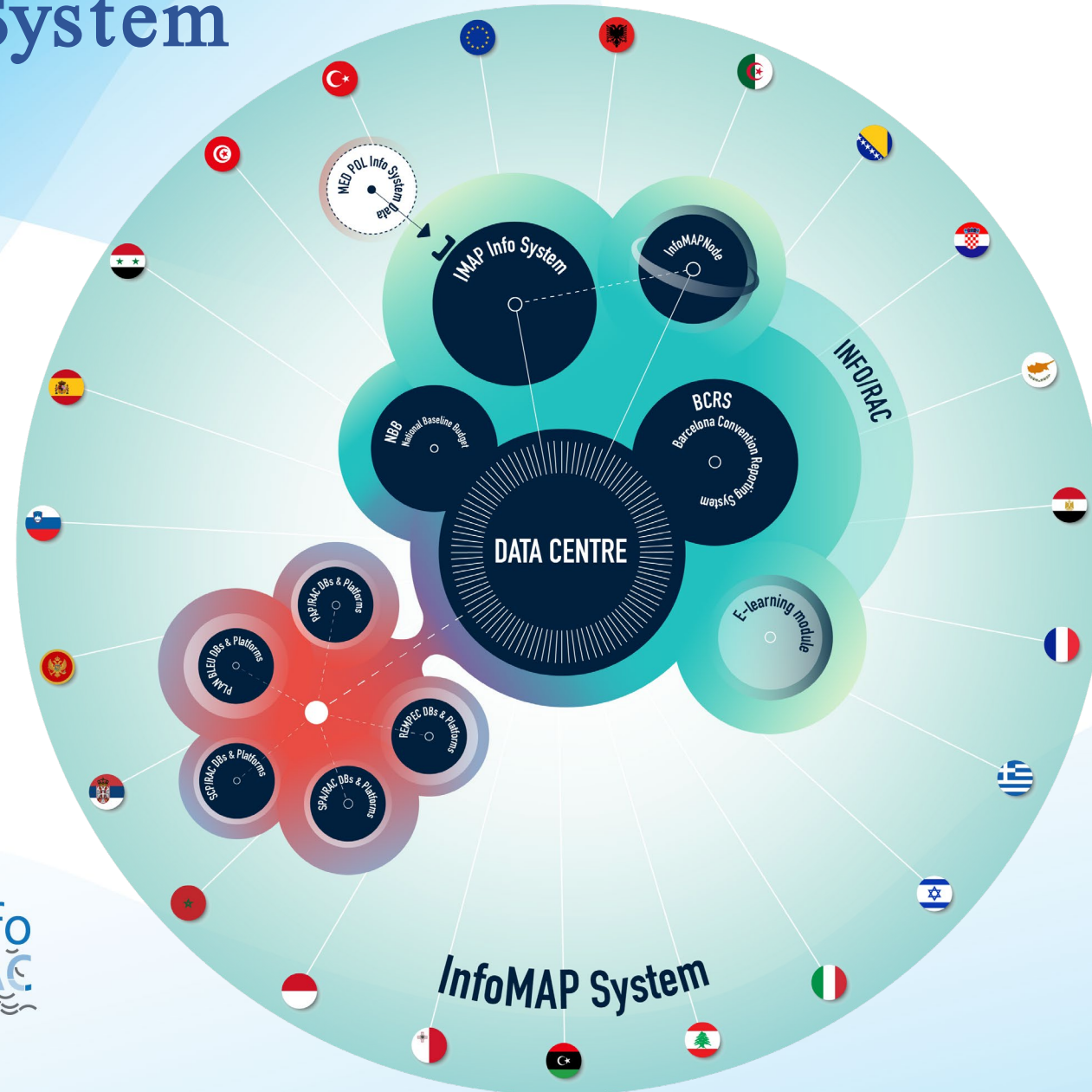MINISTERO DELL'AMBIENTE E DELLA SICUREZZA ENERGETICA

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Outline of the presentation

- InfoMAP System and reporting systems
- The UNEP-MAP data policy
- The data policy implementation: KMaP
- From data to instruments for policy makers
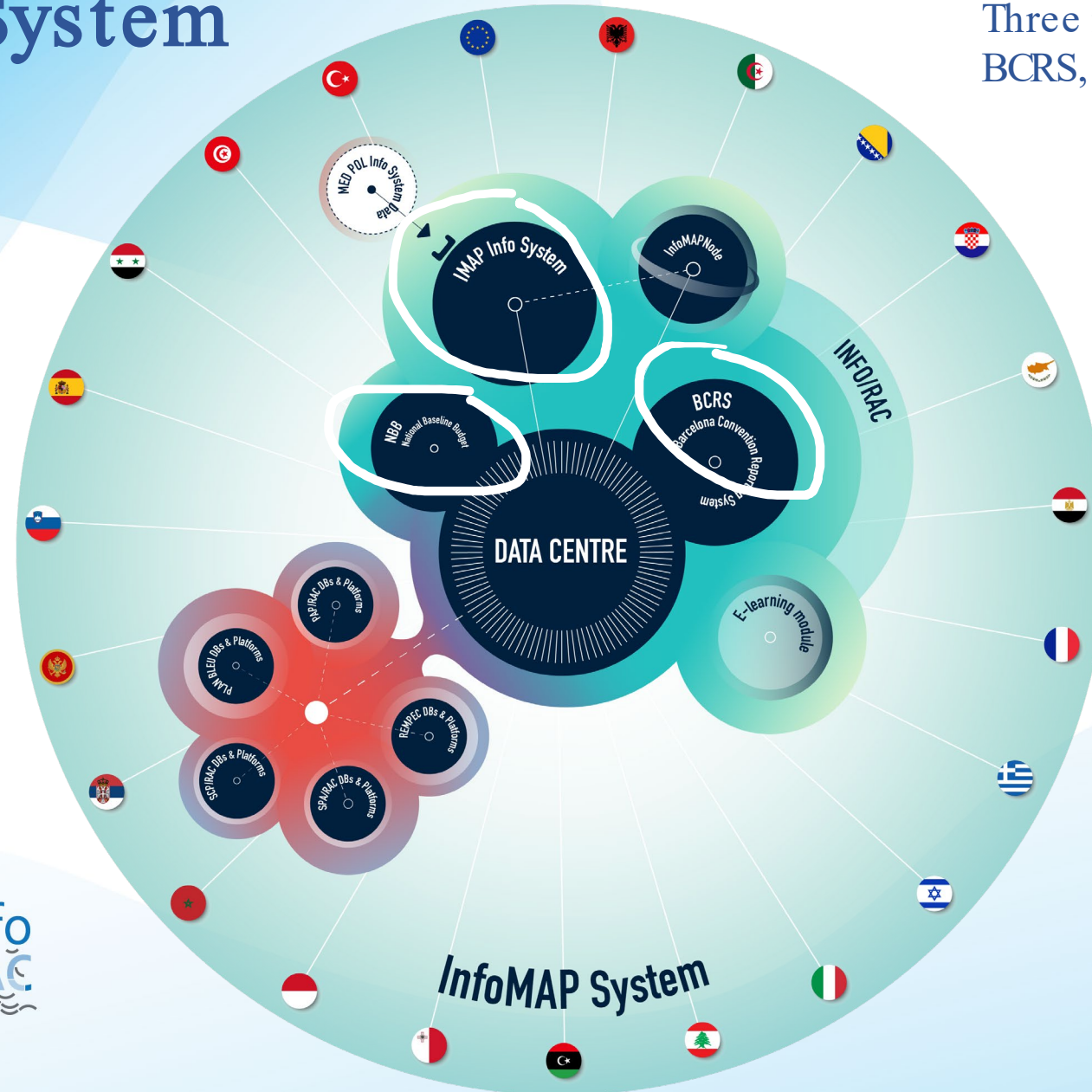- Future perspectives

The InfoMAP System

The Information and Communication Regional Activity Center of UNEP-MAP (INFO/ RAC) has the mandate to set up the technological infrastructure and manage all the data flows of UNEP-MAP

The InfoMAP System
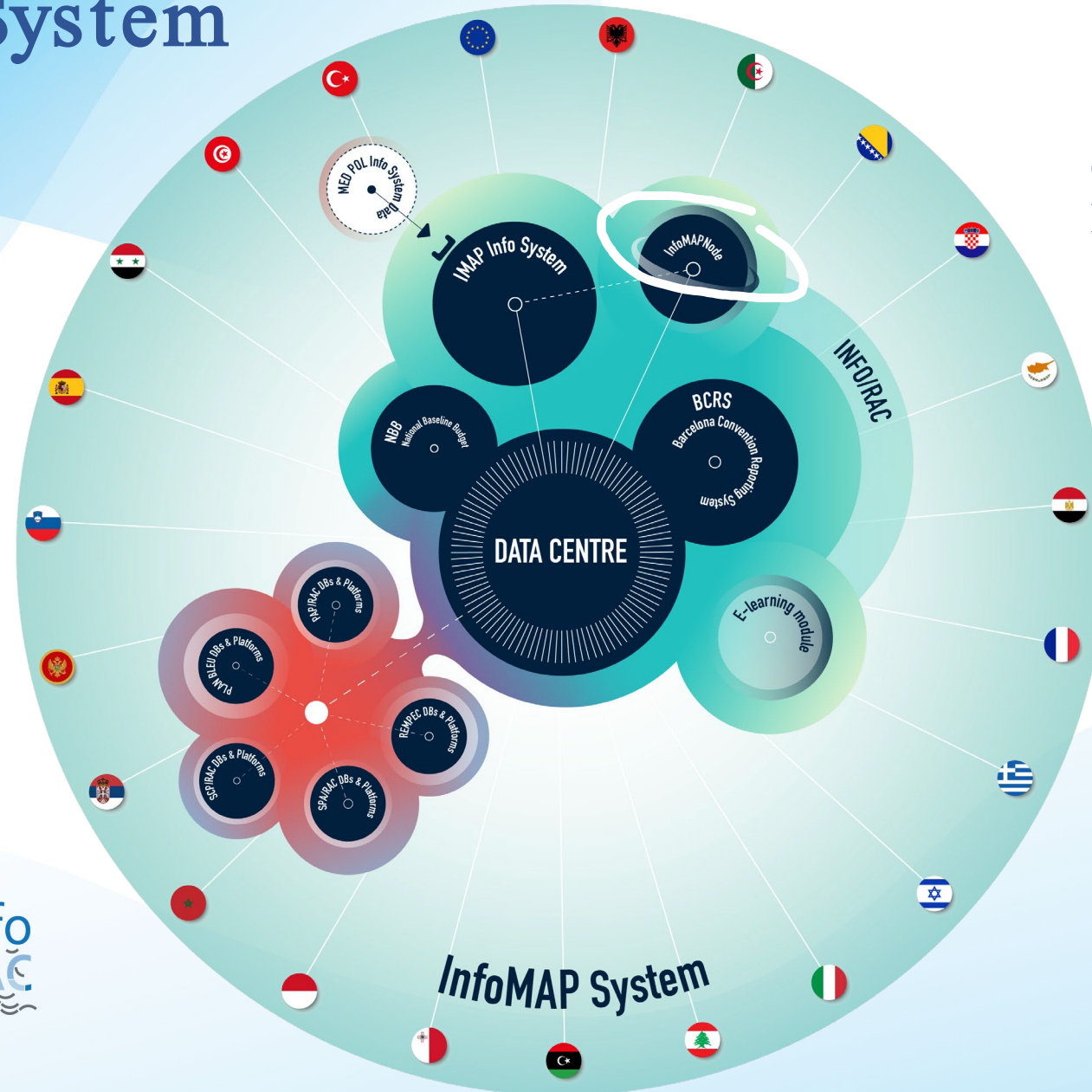
Three mandatory data flows:
BCRS, NBB, IMAP Info System

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The InfoMAP System

One optional data flow:
InfoMAP Node > KMaP

The Information and Communication Regional Activity Center of UNEP-MAP (INFO/ RAC) has the mandate to <u>set up the technological infrastructure</u> and <u>manage</u> all the data flows of UNEP-MAP
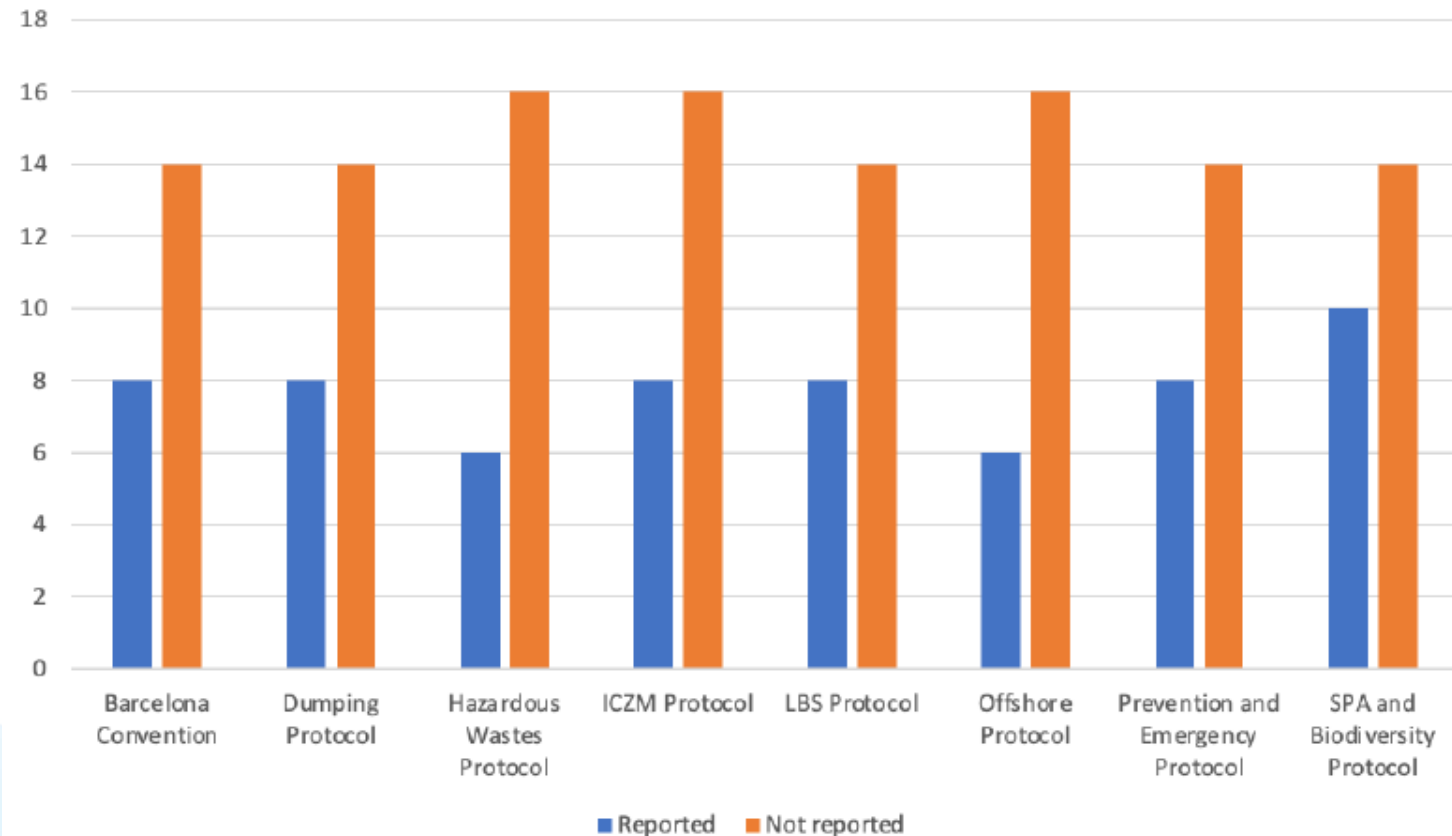

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The Barcelona Convention Reporting System (BCRS)

BCRS (Barcelona Convention Reporting System, https://idc.info-rac.org/bcrs) is the reporting system which collects reports from **different protocols** under article 26 of the amended Barcelona Convention and several articles of different Protocols of Mediterranean Action Plan:

- Barcelona Convention
- Dumping Protocol
- Hazardous Wastes Protocol
- ICZM Protocol
- LBS Protocol
- Offshore Protocol
- Prevention and Emergency Protocol
- SPA and Biodiversity Protocol

Source: Di Stefano, C. (2023, June 9). infoMAP Data Centre and BCRS Dataflow. Zenodo. https://doi.org/10.5281/zenodo.8020895

The National Baseline Budget (NBB)

National Baseline Budget (NBB) is an **inventory of annual pollutant's loads** released by all significant Land Based Sources at country level.

National Baseline Budget meets the obligations established by the **LBS protocol**, monitoring the trend, on a five-year basis, of the pollutant loads discharged into marine environment.

In 2018, in order to support this data flow obligation, INFO/RAC has implemented the National Baseline Budget reporting system flow, available at: https://idc.info-rac.org/nbb

Source: Catini, F. (2023, June 9). National Baseline Budget (NBB). Zenodo. https://doi.org/10.5281/zenodo.8020920

The IMAP Info System

IMAP Info System, developed by INFO/RAC, aims to **collect, manage and share data from monitoring programs** under the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) in the framework of Barcelona Convention.

The System allows Contracting Parties to report on data related to the **Common Indicators** (CIs).

IMAP Info System website is **accessible** to the general public. Also dashboards showcasing data are available. Login for Contracting Parties (CPs) and MAP users is required to access the reserved sections.

Source: Catini, F. (2023, June 9). IMAP Info System. Zenodo. https://doi.org/10.5281/zenodo.8020955

The InfoMAPNode

InfoMAPNode is an **open source geoportal** for sharing different levels of geospatial data and maps and to expose all relevant metadata in the Mediterranean Area, with a specific focus on Barcelona Convention.

InfoMAPNode represents the entry point for InfoMAP Spatial Data and Metadata catalogue, allowing to import **remote services** from UNEP/MAP SDI as well as the other RACs spatial information systems.

InfoMAPNode **provides free and accessible SDI for CPs and National purpose**, allowing to create map using spatial information from different sources and supporting decision makers and public authority

The UNEP-MAP data policy: adoption

Adoption of the Data Policy:

[UNEP/MED IG.25/27, Decision IG.25/10](#) (p. 353)

- Approved during the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 22nd Meeting

- Aim to achieve a base level of legal interoperability

- Establishing base principles, objectives and means to achieve this interoperability for each data flow belonging to the MAP

Decision IG.25/10

MAP Data Policy

The Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 22nd Meeting,

Considering Decision IG.17/5 on the governance of the UNEP/MAP-Barcelona Convention system, adopted by the Contracting Parties at their 15th Meeting (COP 15) (Almeria, Spain, 15-18 January 2008), and Decision IG.19/6 on the Mediterranean Action Plan Civil Society Cooperation and Partnership, adopted by the Contracting Parties at their 16th Meeting (COP 16) (Marrakesh, Morocco, 3-5 November 2009),

Considering further Decisions IG.20/13, IG.21/13, IG.23/3 and IG.24/2 on governance, adopted by the Contracting Parties at their 17th (COP 17) (Paris, France, 8-10 February 2012),18th (COP 18) (Istanbul, Turkey, 3-6 December 2013), 20th (COP 20) (Tirana, Albania, 17-20 December 2017), and 21st (COP 21) (Naples, Italy, 2-5 December 2019) Meetings respectively,

Recalling the mandate of INFO/RAC, as laid down in Decision IG.19/5 on the Mandates of the Components of MAP, adopted by the Contracting Parties at their 16th Meeting (COP16) (Marrakesh, Morocco, 3-5 November 2009), and its relevance to the implementation of this Decision,

Acknowledging the importance to apply the UNEP/MAP Data Policy in the data managed by the UNEP/MAP Barcelona Convention System in order to achieve a base level of legal interoperability,

1. *Adopt* the United Nations Environment Programme/Mediterranean Action Plan (UNEP/MAP) Data Policy as set out in Annex I to the present Decision;

2. *Request* the Secretariat (INFO/RAC) to provide the necessary technical support to Contracting Parties and to address any needs identified to fully implement the UNEP/MAP Data Policy;

3. *Call upon* the Contracting Parties to take effective measures to implement the UNEP/MAP Data Policy.

The UNEP-MAP data policy: mission

quality assurance and quality control procedures

availability of latest data and **maintenance** of long-term series

meeting relevant national **legislations**

recognition of **intellectual property** rights

Constraints

Qualities of the elements

protection of **integrity**, **transparency**, and **traceability** of environmental data

Support
Promote
Enable

interoperability and use of **standards**

publication of **metadata**

research data **stewardship**

citizen science data

full, free and **open access**

re-use of data from different sources

implementation of INSPIRE, SEIS principles, **Copernicus** and **GEOSS** data sharing principles

Elements involved

Principles

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The UNEP-MAP data policy: principles

GENERAL: Data should be managed **as close as possible to its source**, **collected once**, **shared** with others, readily **available** to fulfil UNEP-MAP mandate. (p.356)

A. Interoperability and use of Standards: **Interoperability** means that any piece of information can be shared among multiple actors with the same quality level (quality of instruments, quality of information, quality of elaboration). This is possible only by means of **Standards**: «universally» recognised rules to share information.

B. Open Access: Data must be as open as possible, respecting the constraints imposed by local legislation, sensitivity of data, and copyrights. To formalize Open Access we need **Open Data licenses**.
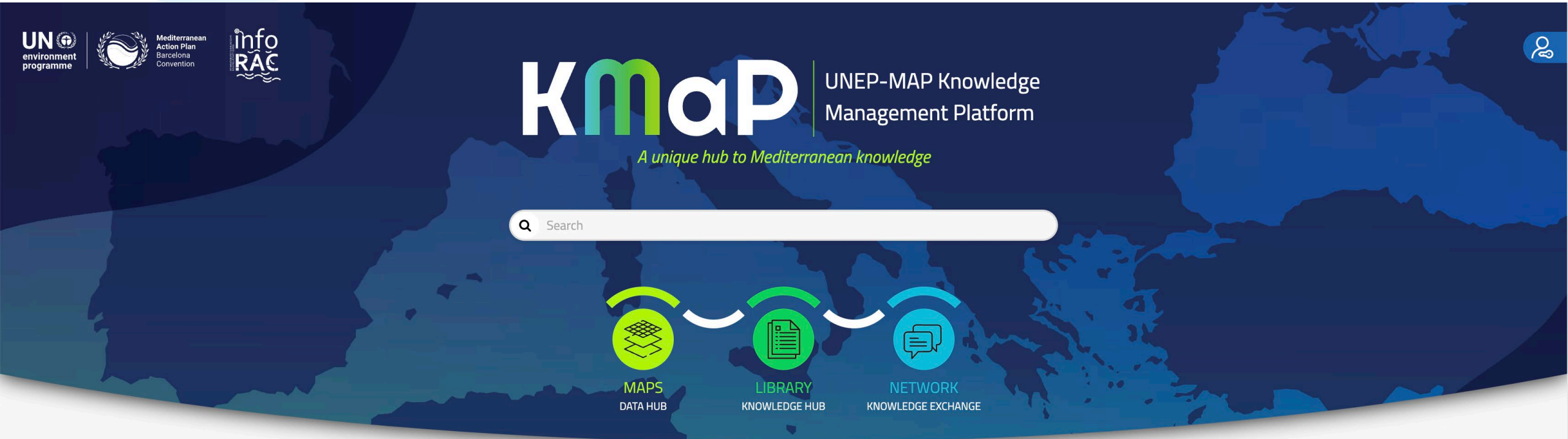
C. Re-use of data: Since we don't want to duplicate efforts, data must be enabled to be **reused**, **exploited** and **recombined** from different sources to different frameworks and media. To this purpose (meta)data should have **relevant attributes** and a detailed **provenance**, together with appropriate **license** and meeting domain-specific **standards**.

KMaP: a data policy implementation

The [MAP Knowledge Management Platform](#) (KMaP) aims to become the unique access point to UNEP-MAP knowledge heritage, following commitments of the adopted Data Policy.

The actual proptoytpe is made by two parts:
1. **Data Hub**: managing «geographical objects»
2. **Knowledge Hub**: managing «non-geographical objects» (documents, videos, leaflets, etc.)

KMaP products : layers and maps

A **Layer** is a single dataset (e.g. 1 shapefile)
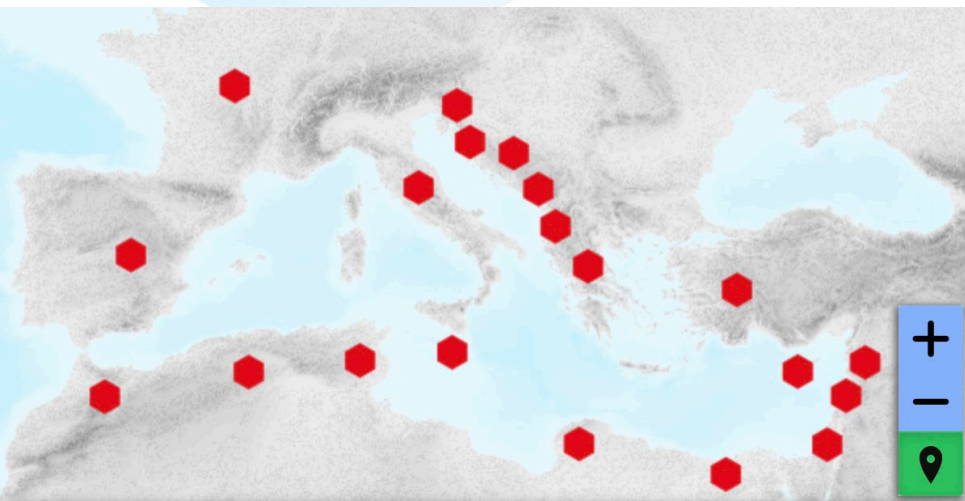
A **Map** is a superimposition of layers resulting in a combination of datasets, with a specific communication aim (data in context)

WISDOM

KNOWLEDGE

INFORMATION
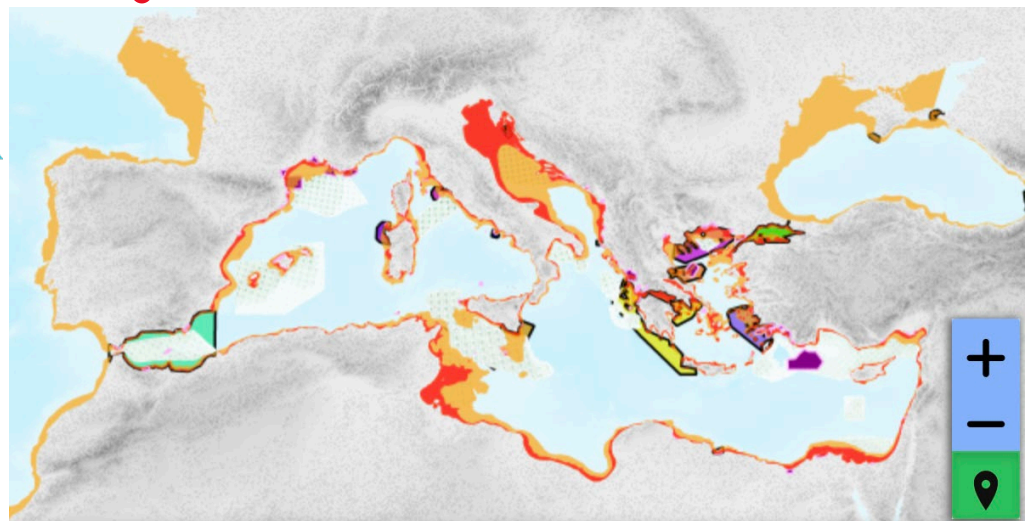
DATA

Coastday - past events

a dataset from PAPRAC - / May 12th 2023

This dataset refers to all the past Coastday events country by country. Coastday is an event of awareness rising organized yearly by PAP/RAC and involves Contracting Parties from the whole MAP.
Category: MSP

View dataset

Species distribution analysis

a map from INFORAC Editor / February 13th 2023

Spatial analysis of species distribution by crossing SPAMI areas, species distributions of horse mackerel and Mediterranean mussel.
Category: Species

View map

KMaP products: documents

Documents have been linked to their sources, not harvested Sources are: RAC's libraries, UNEP and UNEP-MAP libraries accounting for more than 16k documents.
The library implements a full text serach able to retrieve documents also based on their content.

Each resource can be linked to other resources, i.e. other language versions of the same document, documents from the same meeting, documents and data from the same project

KMaP products: remote services

KMaP links many **remote layers** from other portals and, conversely, KMaP public geographic data is available to be shared by means of remote services working with OGC standards WMS and WFS: in this way other portals/platforms, but also desktop GIS, can exploit UNEP-MAP data
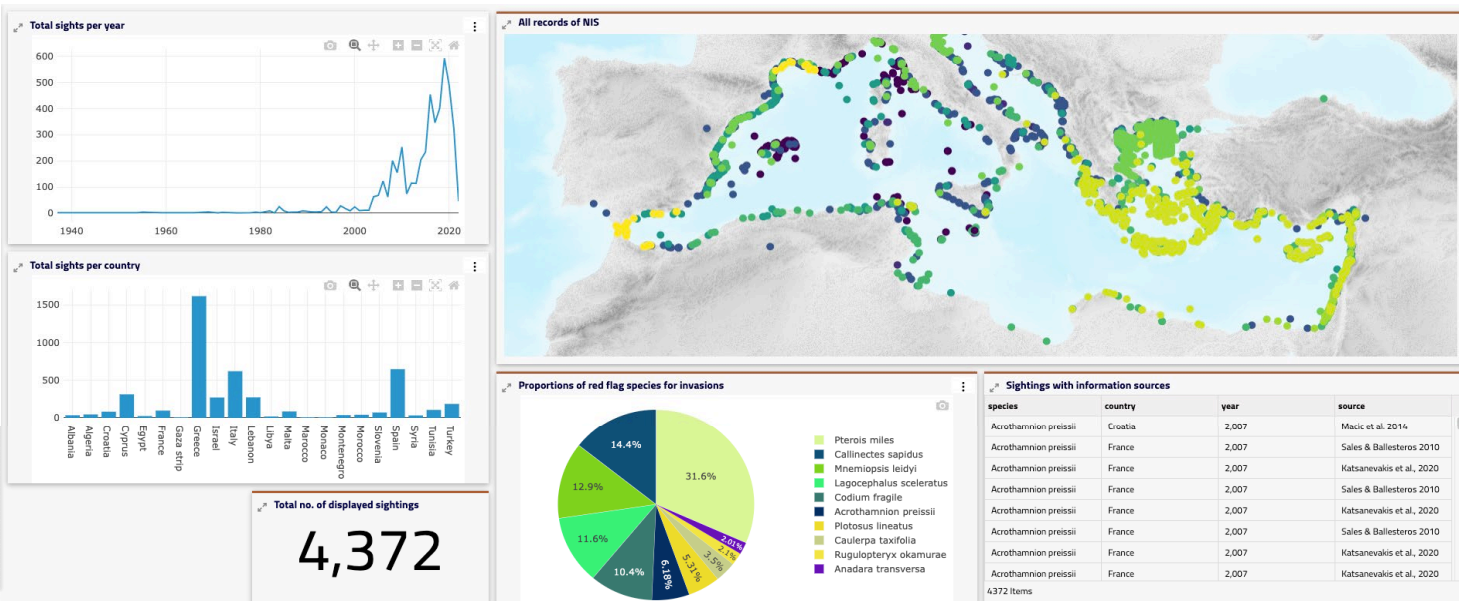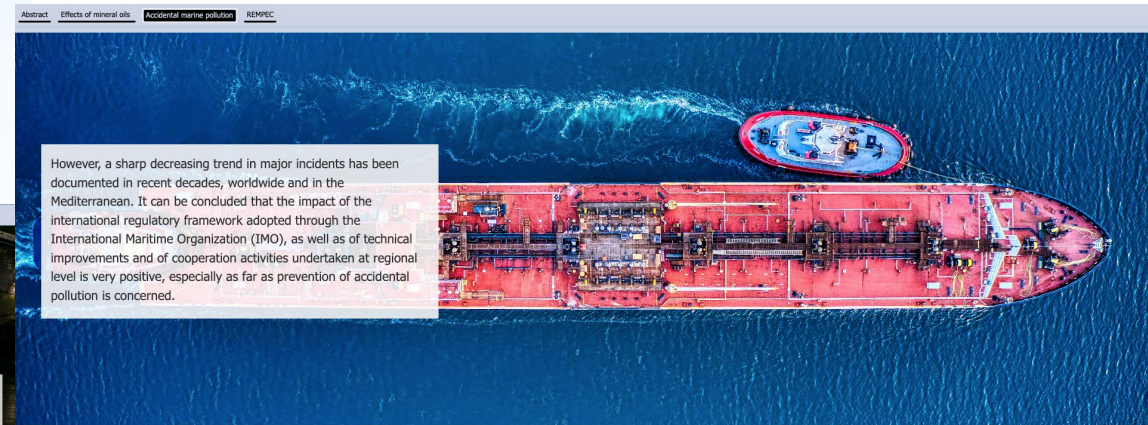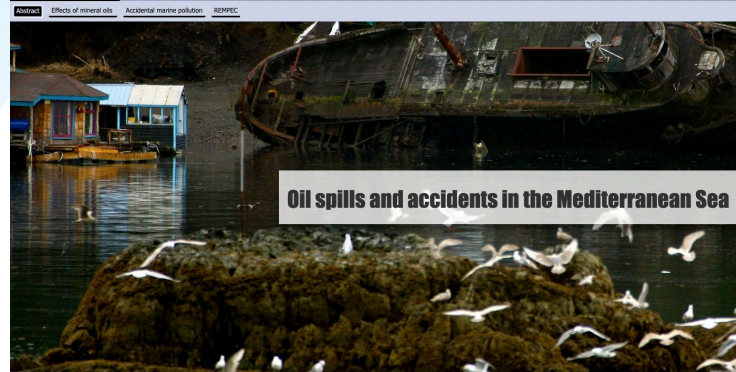
KMaP products: geostories and dashboards

GeoStories are powerful divulgation instruments that combine text, interactive maps, and other multimedia content like images and video or other third-party contents

Efficient to present ideas supported by geographical and non geographical data!

Oil spills and accidents in the Mediterranean Sea

However, a sharp decreasing trend in major incidents has been documented in recent decades, worldwide and in the Mediterranean. It can be concluded that the impact of the international regulatory framework adopted through the International Maritime Organization (IMO), as well as of technical improvements and of cooperation activities undertaken at regional level is very positive, especially as far as prevention of accidental pollution is concerned.

Dashboards provide charts, maps, tables, texts and counters attached to datasets with the aim to visualize specific data in context, interact spatially and analytically with the data by creating connections between widgets.

Useful to have a rapid outlook on data!

Future perspectives: the Knowledge Exchange Hub

To be implemented in the next year, the Knowledge Exchange Hub it is a place where decision makers, stakeholders, communities of interest and citizens can virtually meet UNEP-MAP.

Network

WHO — scientists
citizens
Stakeholders

WHAT — got news
learn
exchange ideas
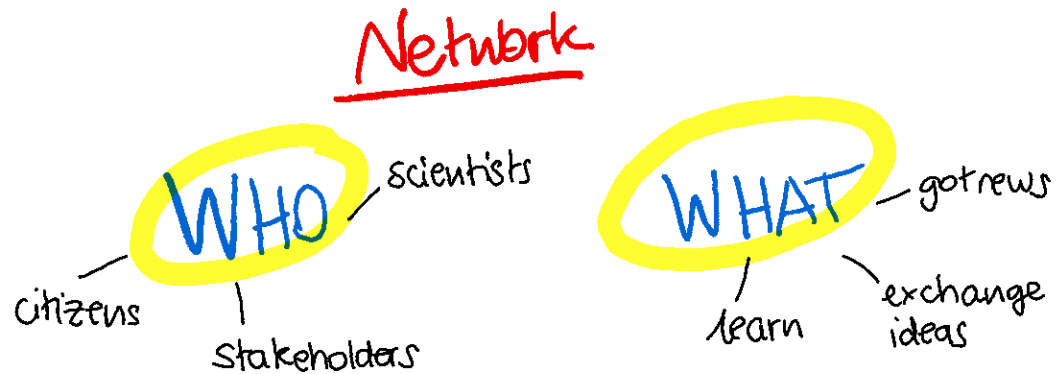
Contents:

if you are a citizen:
- Seawatcher app link
- Interactive games
- link to divulgation channels

if you are a Stakeholder:
- forum
- helpdesk
- PMT

if you are a scientist:
- KH filtered contents
- DH filtered contents
- Jupyter lab (IMAP)

Elearning platform:
- training
- workshops
- webinars

Designed around users' needs, it will give the possibility to:
- Better **explore** UNEP-MAP data
- **Got news** on activities and datasets
- **Get trained** on data and platform
- Keep a **link with scientific community** about UNEP-MAP hot topics
- Make available **further instruments to interprete data** in context, to gather information

THANK YOU FOR YOUR ATTENTION

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